COMMONWEALTH OF KENTUCKY

WASTE TIRE MARKET DEVELOPMENT SUPPLEMENT FOR ATHLETIC FIELD CRUMB RUBBER PROJECTS

PURPOSE

This supplement provides detailed instructions and additional guidance for applicants seeking financial assistance to develop an athletic field crumb rubber project

Division of Waste Management

Environmental and Public Protection Cabinet

GENERAL INFORMATION

This supplement is intended to help grant applicants develop a success athletic field crumb rubber project application. The information provided should serve as a guide to understanding the Environmental and Public Protection Cabinet's (EPPC) technical requirements of a successful project. Additional information has been included to provide the applicant with general introduction to recognized material types and application methods for this type of project. The EPPC does not prefer any specific contractors or material sources. Any specific references to private companies should not be considered as an endorsement.

ADVANTAGES OF CRUMB RUBBER

Research by Michigan State University has shown good results for football and soccer fields along with golf course paths. See http://www.css.msu.edu/TopDressing.cfm for more information. The area in front of the soccer goals and the midfield area normally wear down over the season, as does the area between the hash marks on a football practice field. Adding sand improves drainage and decreases muddiness, but it cuts the crown of the grass making the problem worse. Adding ¾ inch thickness of crumb rubber, in three applications of ¼ inch thickness, improves the turf survivability. The crumb rubber size should be between 10/20-mesh and ¼ inch. EPPC recommends about one-half of the smaller size and one-half of the larger. Crumb rubber has the following advantages:

- Does not damage the crown tissue
- Lowers impact adsorption, which increases turf life and possibly lowers injuries
- Increases heat retention, which leads to earlier and later growing seasons
- Increases the number of events from about 60 per year for a normal grass field to about 100 for a crumb-rubber treated area (NORTH KINGSTOWN HIGH SCHOOL, NORTH KINGSTOWN, RHODE ISLAND cost analyses)
- Saves $1330 per 1,000 SF per year in maintenance costs (mostly in turf reestablishment costs), or about $22,000 per year for an 81,000 SF field (MSU)

The 10/20-mesh size costs more but works into the turf more quickly, providing faster results. Too much of the small particles may change the soil structure. The ¼ inch takes longer to work into the turf, but does not change the soil.

The use of crumb rubber is not a replacement for normal turf maintenance. You must reestablish grass on bare spots before spreading the crumb product. You are also responsible for providing the normal funding for yearly upkeep. Please state the amount of money or effort that you plan to dedicate to maintenance.

LETTERS OF ENDORSEMENT

The head of the agency or unit should sign the grant request. For a school, this would be the superintendent; for a city the mayor, for a county the county judge-executive. For those projects that require authorization by a board such as the school board, city council or fiscal court, enclose the minutes of the meeting passing the expenditure.

ANTICIPATED COST AND SAVING OF A TYPICAL PROJECT

The total cost of a qualified contractor placing crumb rubber on one athletic field is estimated to be $35,000 to 42,000. The state grant would be $20,000. You would pay the rest of the cost.

The typical savings are estimated to be about $20,000 per year in vegetation reestablishment costs, if one were to hold 100 events per year on the field.

FUNDING

You must provide at least one-half of the funding for the use of the crumb rubber athletic field project. You may:

- Contract the work with a qualified firm or;

- Buy the crumb rubber and substitute volunteer effort for funding if a work plan and list of acceptable equipment is submitted with the grant request.

FORMAT

You must follow the format of the Waste Tire Market Development Application. Listed below is specific guidance for the respective application categories:

PROJECT RATIONALE

Describe the proposed project and its objectives. Provide a rationale for the project and its current status.

Show the planned increased usage for the subject field(s), i.e., from current use (60 or less, usually) up to 100 games or practices per year. If the fields are already used 100 or more times per year, show increased maintenance savings as described above. Best use may be the increased use of practice fields, followed by the increased use of the main game field for other events such as JV, freshman and Little League or Recreation League football games, soccer games, etc.

State if you plan to cover the entire field with crumb rubber, or just high-use areas such as between the hash marks and twenty-yard lines for football or goal/mid-field areas for soccer.

Describe the number of people served by the project and the approximate geographic area or community that will benefit from the project.

For a school, state the boundaries of the area served by that school. For a high school, it may be an entire school district, while for an elementary school it may be a smaller area. State the population served by the school.

For a county or city park, state the county or city served and its population. If county residents use a city park, state so.

MATERIAL DETAIL

Provide written documentation regarding the quality, quantity, cost, and availability of your source of waste tire material.

Contractor: If you are using a top-dressing contractor, such as Turf Solutions, JaiTire or similar company, they may furnish the calculations for you in their bid or estimate document.

Quality: State the size of crumb rubber that you are using. The size may be as small as 10/20 mesh, or as large as ¼ inch crumb rubber.

Quantity: State the amount needed to complete the project. We do have confidence that the crumb rubber topdressed at 0.50 to 0.75 inch levels (1200 to 1800 lbs/1000) will increase turfgrass wear tolerance and prevent soil compaction in turfgrass maintained above 0.63 inch (MSU study).

For a ¾ inch depth over an entire football field, you would need 70,000 SF X 1800 lbs/1000 = 126,000 lbs or about 125,000 lbs.

Cost: Call several crumb rubber producers. If the quoted price is $0.20 per pound delivered, the total crumb rubber costs would be $25,000.

Availability/Source: If using a contractor, state “contractor.” If purchasing the crumb rubber directly from a manufacturer, state “producer.”

PROMOTION DETAIL

Provide a plan to inform and educate the surrounding community about the project. You may attach examples of proposed newspaper articles or other media types intended to be used.

You may use a press release for this proposal. Here are some pertinent facts for the suggested release:

- The purpose of this project is to recycle waste tires while extending turf life and possibly reduce the number of injuries;

- Or the field is used for ___ events per year. With the crumb rubber, the field may be safely used for up to 100 events per year. This allows (name additional sports, more practice time on the field) with less turf wear and bare spots that lead to more injuries. Research by Michigan State University shows increased impact absorption values that should protect the crown tissue of the grass from damage, unlike sand, which is sharp and damages this area. The increased "bounciness" and decreased bare spots should also reduce injuries

- The project will help find uses for tires in abandoned scrap tire piles that are breeding grounds for the Asian tiger and Eastern treehole mosquito, which carry infectious and equine encephalitis as well as the Nile Virus (see the Cabinet for Health and Family Services Web site for the latest West Nile Virus information http://chs.ky.gov/publichealth/west_nile_virus.htm)

- Disposal of whole tires in landfills is banned because they 'float' to the top and interfere with heavy equipment compacting the trash or placing the final cap.

- Americans generated 290 million scrap tires in 2003, or about one tire per person, and reused 233 million, or 80.4% according to the Rubber Manufacturer's Association.
  See https://www.rma.org/publications/scrap_tires/index.cfm?PublicationID=11106

- Kentuckians generate about 4 million scrap tires per year and reuse about 3 million per year, mostly as Tire Derived Fuel and landfill liner protection. This project is part of a state effort to create higher-use waste tire markets

- The legislature created the one-dollar per tire fee in 1998 and reauthorized it in 2004. It will sunset in 2006. (The fee does not include tire disposal costs). The governor oversees this program through the Environment and Public Protection Cabinet (EPPC). The fee has paid for the clean up of 15 million waste tires abandoned in piles or delivered by citizens to two amnesty programs. In 1994, the state estimated that about ten million tires existed in stockpiles. Today, there are no

major stockpiles remaining. The EPPC now focuses its major efforts on future scrap tire market development

- Your project will use 8,000 to 12,500 scrap tires per field
- You are paying $_____ and the state is granting $_____.

If you need more info, please contact (local contact name) or Eva Smith-Carroll at the EPPC Division of Waste Management at (502) 564-6716.

MILESTONES

The example given in the grant application is for athletic fields done under contract and is suitable for those situations.

Note that “Prep field” includes reseeding and fertilizing for reestablishing 100% grass.

One should not spread more than a ¼ inch thickness of crumb rubber during any one given application, according to the MSU study. Therefore, you need two applications for 0.5-inch and three for 0.75-inch thickness. We recommend 0.75 inch.

The time between each material application should be long enough for the rubber particles to work down to the base of the grass. This is usually until after the next rain event or mowing. An experienced contractor may specify the period.

REPORTS

For reporting, include the following with a cover letter by January 31 of each year for two years following the athletic season after the crumb rubber application:

Comments from the coach

“Before” and “after”:

- Pictures.
- Maintenance costs
- Number of injuries

For the second season’s report, just give us the “after” information.

BUDGET DETAIL

An experienced contractor can give you this information.

Waste Tire Materials is the crumb rubber costs at the place of manufacture.

Transportation is the cost of trucking the crumb rubber from the place of manufacture to your location.

Application of Material is the cost of spreading the crumb rubber. State if volunteers are used and, if so, report the estimated time for each application and the number and type of machinery. The state will calculate the estimated value of any volunteer effort.

Equipment should be noted in Application of Material.

Personnel should be noted in Application of Material.

Promotional and Educational should reflect personnel and material costs for press releases, press interviews and speeches to civic clubs.

For more assistance in completing the grant application, please call Lisa Evans at the Division of Waste Management at (502) 564-6716. For technical information, call George Gilbert at the same phone number.